

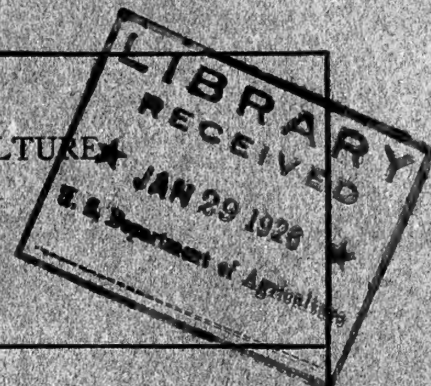
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UNITED STATES DEPARTMENT OF AGRICULTURE

## FOREST SERVICE



### MONTHLY REPORT OF THE OFFICES OF FOREST EXPERIMENT STATIONS AND DENDROLOGY

DEC 1925







MONTHLY REPORT OF THE OFFICES OF  
FOREST EXPERIMENT STATIONS AND DENDROLOGY

December, 1925

FOREWORD

(From "A Report of Committee on Experiment Station Organization and Policy of the Association of Land Grant Colleges, 1924.")

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In presenting the final draft of the code of ethics with its recommendation that it be adopted by the association, the committee understands that no code of ethics can be made a binding rule or administrative regulation; but that it is instead a statement of what is regarded by the group as the professional standard of conduct in such matters. It is conceivable, of course, that an administrative officer might, if he so chose, make conformity to the code an essential to membership in his organization. But adoption of the code by the association does not mean that it shall be so used, and it is the opinion of the committee that such use of the code will rarely if ever be so made.

A Code of Ethics for Experiment Station Workers

First. To recognize that the American agricultural experiment stations are supported by all the people and are maintained to serve the general welfare by the discovery of truth with respect to the problems of agriculture; and that any perversion of truth, or any personal, institutional, or class discrimination in making available any truth which may be discovered is subversive of the purpose for which the stations are maintained.

Second. To formulate and execute research policies so as to direct the power that lies in enlightened self-interest of people into channels of efficiency and mutual helpfulness; but never to countenance any departure from a proper spirit of scientific research that may be suggested by hasty and ill-considered whims of public sentiment.

Third. To realize that while an experiment station worker is a scientific man properly ambitious to advance professionally, he is first an ethical man and wishes no success or advancement that is not founded in justice and morality; and to endeavor to elevate and safeguard the standards of the profession.

Fourth. To recognize that the results of experiment station work depend for their value upon the honesty and fidelity with which the work is conducted, and that ultimate reliance on these results must rest upon the integrity of the personnel engaged in station work; and to conduct oneself at all times in strict accordance with these principles.

Fifth. To discuss scientific problems and views freely with colleagues; but to respect scrupulously any privileged or confidential information given in these discussions, and to avoid taking unfair personal, professional, or institutional advantage of the knowledge thus gained.

Sixth. To keep adequate written records of research and experimental work done for any experiment station; and to regard all original records strictly as belonging to the station and not in any sense as personal property, except that in all cases due credit should be given to the worker by the station which publishes the results.

Seventh. To be altruistic in all relations with fellow workers and with the public; and to recognize that the results of experimentation and research belong to the respective stations (of which the research workers are members and on whose time and with whose equipment and funds the work is conducted) and, through them, to the public.

Eighth. To exercise reasonable conservation in the publication of conclusions; but not to withhold from colleagues or from the public the results of important and useful investigations, either for selfish personal or professional reasons or while seeking to attain absolute finality or perfection.

Ninth. To give full credit to any person, or experiment station, or other agency, that has contributed to the obtaining of the results which are published.

Tenth. To recognize the right of a prospective worker to have a true and comprehensive statement of his proposed official duties and limitations; and to avoid, as far as may be possible, making material changes in those duties and limitations without the consent of the worker concerned.

Eleventh. To recognize that increased efficiency deserves increased compensation; to make every possible effort to apply this principle to subordinates; to be patient and reasonable while superiors are making such efforts in one's behalf; to acquaint subordinates with information which may be received of positions in which they may be interested, and to encourage conferences regarding opportunities for advancement; not to seek offers of other positions solely for use in an endeavor to enforce involuntary increases in compensation.

Twelfth. To recognize the fundamental importance of continuity in station work, and to avoid taking a worker from one station to another or leaving the employ of a station, without giving reasonable opportunity in either instance for making necessary adjustment.

Thirteenth. To regard the research profession as dignified and worthy, and to do work and conduct relations with other workers and with the public in a spirit of loyalty and service.

## FOREST EXPERIMENT STATIONS

### WASHINGTON OFFICE

During the month of December there was very little work accomplished in Washington. Sickness, leave, and the holiday season were responsible for many members of the force being absent from the office. This was especially marked in the Office of Forest Measurements where at times there was only one person where normally there are seven or eight.

Mr. Clapp attended the annual meeting of the Society of American Foresters held at Madison, Wis., where he met several of the other Experiment Station men and was able to discuss with them various phases of their activities. Mumms left Washington the first of the month going to Charleston, W. Va., to attend the annual meeting of the Western Virginia Forestry Association. He also attended at the same time a meeting called by Governor Gore to decide upon a conservation policy for the State. Following these meetings, he went to the Southern Experiment Station, visiting first Starke, then a field party in Southern Alabama, and then spending some time in New Orleans. He returned to Washington the end of the month.

In the section of Forest Measurements, McArdle from the Pacific Northwest is now working. Arriving in Washington in the middle of the month he brought with him a large amount of the Douglas fir yield data on which he is getting the advice and help of the office. He is also availing himself of the opportunity to use the punch card equipment and tabulator. McArdle will probably be in Washington during the month of January.

In the Tabulating Section, most of the time was spent upon the Northeastern States fire study. There are several thousand reports from the State Foresters which the section is now working up in accordance with the desires of the Northeastern States. Incidental other work was performed currently on other projects. At the present time there is a great amount of material awaiting action on these cards. Both in the section of Forest Measurements and in the Tabulating Section the work is now at a peak, and it undoubtedly will be impossible to get out from under this load much before the first of April. In addition to the regular work of the office there are several other demands which have been made for the use of the equipment.

## Canadian Work

An interesting letter was received from E. M. Barr, in charge of the forest research work at Prince George in British Columbia. Among other things Mr. Barr states in his letter:

"Our activities this year have been entirely preparatory in nature, and confined to the development of the Aleza Lake Forest of about 6,300 acres for experimental work. It is planned to do considerable silvicultural work in this Forest, the first cutting to take place in 1926.

"Next summer the main project of the Station will be a study of the reproduction of the spruce-balsam type. I expect two parties will work along the valley of the Upper Fraser, the object being to determine the conditions of reproduction throughout the region in virgin timber and on cut-over and burned areas. A third party will study the factors responsible for reproduction conditions on the Aleza Lake Forest by means of permanent sample plot. These will be logged under different methods and the effect of cutting to be observed in future years. Some experiments in brush disposal will also be started.

"Along the coast the studies have been confined to the reproduction in the Douglas fir type and the relations between relative humidity and the distance from the seed. These taps were placed at various distances from green timber and quantities of seed caught as far as 60 feet from the nearest trees."

## Forest Experiment Station Bills Introduced

Congress began its annual grind early in December and up to the present time (January 15, 1926) four experiment station bills have been introduced: one for an Ohio Valley station appropriating \$50,000; one for the Southwest, carrying \$30,000; one for Pennsylvania carrying \$75,000, and a bill to increase the amount for the Appalachian Station to \$40,000. The Department of Agriculture bill provides for a California Station with \$30,000, but the general bill also provides for a cut of over \$7,000 in the Silvical Investigations item.

## Library

During the month of December the library loaned 999 books and periodicals, and 123 members of the Service and others consulted the library in person.

There were 265 books and magazine articles indexed for the catalogue last month.



### A New Book for Station Libraries:

Well worth having on hand is a small book by Sir John Russell and others (Longmans) "The Microorganisms of the Soil."

### "CLEAR, EFFECTIVE WRITING"

In the interests presumably of clear, effective writing, a meeting was called in the Department recently of publication folk, editors, and others of that ilk. The assembled minions of the blue, green, and red pencil were given the privilege of meeting and listening to Mr. Crawford, Director of Information, and Mr. Green, Deputy Public Printer. Various attempts were made to persuade the Deputy Public Printer to agree that in such matters as the standard spelling of technical terms the usage of scientists, trade papers, and the general public might have some weight. All failed. It was, however, unanimously agreed that tables in the Journal of Agricultural Research would hereafter be numbered in Arabic rather than Roman numerals. Having achieved this glorious advance in publication methods, the meeting adjourned.

### Illustrative Tables

If tables can be arbitrarily divided into four classes, such as, first, statistical tables; second, functional tables (such as log tables); third, list tables (which merely enumerate or list varied data); and, fourth, illustrative tables, it will be agreed that the first three explain themselves fairly well, and that their make-up is a relatively simple affair, requiring only rudimentary knowledge of the relation of headings and subheadings, or the following of certain definite set rules. Illustrative tables, on the other hand, need explication.

The name for them is used in its most obvious sense. They are tables, usually not presenting all the data collected, generally limited in their application to the immediate text, which are made up primarily to illustrate the subject matter of the bulletin or circular or article in which they appear, or to bring out salient facts from a mass of data, or to prove particular points discussed in the text. Sometimes they are simple list tables, less frequently they are pure statistical tables, and it is even conceivable that a functional table, such as a volume table, might be given primarily to illustrate a peculiarity of form rather than for the purpose of computing volumes. As stated previously, illustrative tables have been so called not to distinguish a kind of table so much as a use.

The first requirement of illustrative tables, and for the purposes of research bulletins and circulars that means practically every table used save perhaps those relegated to appendices - the first requirement is that they illustrate. For example, suppose we are discussing two distinctly different plots, on which have been planted, in two different kinds of ground cover respectively, seeds from air-dried cones and seeds from kiln-dried cones. A table is made up showing the results in germination and survival from each kind of cone, in each ground cover, on each plot. What are the headings, in what order are the subheadings to be, and what is in the stub? Here are a few perfectly good ways of presenting the table:

Plot A		Plot B	
Cover A	Cover B	Cover A	Cover B
A-cones	B-cones	A-cones	B-cones
A-cones, B-cones, etc.			

Germination  
Survival

---

Plot A	
Germination	Survival
Cover A	
A-cones	
B-cones	
Total	

Plot B	
Germination	Survival

Cover B  
A-cones  
B-cones  
Total

---

Cover A	
Plot A	Plot B
Germ. Surv.	Germ. Surv.

Cover B	
Plot A	Plot B
Germ. Surv.	Germ. Surv.

A-cones  
B-cones  
Total

---

A-cones

B-cones

Germination  
Plot A  
Cover A  
Cover B  
Total

Survival  
Plot B  
Cover A  
Cover B  
Total

---

Which form would be used must be decided according to what it is in the text that is to be illustrated, what comparison is of most importance, what totals or averages are wanted, how the table will fit on a bulletin page, and the make-up of other correlative tables. It is safe to say of any table that you prepare, that unless you have considered more than one possible arrangement, with the view of getting the most out of the data, your chance of making your table really illustrative is not good.

## DENDROLOGY

### Activities of the Federal Horticultural Board

Reference was made in November to the public conference held in Washington by the Board, the object of which was to obtain full information for and against excluding narcissus bulbs on January 1, 1926, as planned 3 years ago. In allowing unlimited entrance of these bulbs during the last 3 years the Board's object was to enable bulb growers in this country to establish a home production that would meet all home needs, thus eliminating the continuous danger of admitting insect pests which are carried by foreign bulbs. These pests are known now to be dangerous menaces to our onion and alfalfa cultures. Horticultural necessity alone forced the Board temporarily to grant a three-year period of unlimited importation.

After carefully weighing the evidence presented, the Board recommended to the Secretary of Agriculture that the quarantine be applied as planned on January 1, 1926. The Secretary gave exceedingly careful consideration to the Board's view of the question and to a thorough analysis of the different views voiced at the Conference, and on December 30, 1925, he decided that the best interests of American agriculture would be served by excluding, as planned, all further unlimited importations of foreign-grown narcissus bulbs.

It is still possible, under a provision of the Board's Quarantine No. 37, to import for propagation only limited quantities of new or little known varieties of narcissus not obtainable in this country. But all such bulbs are to be subjected to very critical inspection and to a treatment for from one to two hours in hot water, which, as applied under the direction of the Board, can be made 100 per cent effective in killing bulb insects, and the treatment does not injure the vitality of the bulbs.

At the present time narcissus bulb culture is established in the Carolinas, Florida, California, Oregon, and Washington. Slight infestations by bulb insects are known to be present in parts of the Pacific States. Under arrangements now under way these infested areas will be placed under rigid quarantine and treatment is to be applied that will exterminate these pests. When this is accomplished to the satisfaction of the Board, growers

in these sections will be permitted to distribute their bulbs freely to any part of the country. California bulb growers voluntarily asked to have these restrictions applied to infested areas until all bulb pests have been thoroughly exterminated, and there is reason to believe elimination of these pests will be speedily accomplished.

#### Extended Range of Norway Pine

Dendrology is indebted to Mr. A. B. Brooks, Chief Game Protector, West Virginia, for sending a specimen of pine for identification which proved to be *Pinus resinosa*. Further inquiry brought information that this species, not hitherto known to grow naturally in West Virginia, was found occupying a considerable area near the summit of North Fork Mountain, which lies between the South Branch of the Potomac River and its North Fork, in Pendleton County. The trees are growing on both sides of the road running from Franklin to Circleville. The stand includes trees ranging from 3 to 10 inches or more in diameter. No very large trees were seen, and no information is available as yet regarding the height and age of these trees.

Heretofore *Pinus resinosa*, which ranges from Nova Scotia westward through the Northern States and adjacent portions of Canada to Manitoba, and to Minnesota and Wisconsin, had been detected as far south only as southeastern Pennsylvania. This new extension of range fortunately can be included in the revised Check List, which is still in the process of publication.

#### Distribution of the Hairy Chinese Chestnut

Arrangements have been made with the Office of Foreign Seed and Plant Introduction (Bureau of Plant Industry) through which enough 3-year-old stock of the Chinese Hairy Chestnut (*Castanea mollissima*) is to be supplied during the spring of 1926 for planting one and one-half acres of ground. The plants are to be tried at the Appalachian Forest Experiment Station and at Letchworth Park, New York. This chestnut gives promise of resisting the bark disease, and, because of its large size and rapid growth, of taking the place in part at least of our native timber chestnut. So far as now known it is generally not susceptible to the bark disease, only occasionally individuals being affected. Its fitness for growth in all sections of the range once occupied by our chestnut tree must be determined by actual growth trials. So far as is known now, it probably will not be hardy in the northern part of this range.

#### ROCKY MOUNTAIN EXPERIMENT STATION

##### December Activities

The month has been devoted by Roeser and Bates almost wholly to compilation of records and summarizing of data for the investigative program.



December 11-13 both men went to the Station for some work on a new tolerance experiment which has been under way about 2 months.

Roeser's time was spent largely on records of the Station forest, on which good progress is being made.

Bates left on the 27th for the Kansas City meeting of the A.A.A.S., after which he took a few days leave, returning January 7. Besides listening to many botanical papers, profitable contacts were made with a number of scientists.

### January Plans

The meeting of the District Investigative Committee will be held in Denver probably on the 18th and 19th of January.

Roeser will just about finish the Station forest records, including maps.

Bates will resume work on the growth studies report in so far as the program work leaves time for it.

### SOUTHWESTERN

Practically the entire month was devoted to compiling data and preparing reports. Krauch worked on sample plot records and has lined up enough compilations on this study to keep Clerk Wittorff busy for the rest of the winter. Pearson prepared his report for the District Investigation Committee.

The ground was bare of snow in the last week of the month, - a very unusual condition at this time of the year. Pearson took advantage of the opportunity to make <sup>several trips</sup> ~~several trips~~ out into the forest. Seedlings are looking well despite cold open weather. The soil was put in very good condition by rains in October and November. A few cattle still remain in the yellow pine type. No evidence of severe damage by this class of stock was found. Sheep damage done mostly during the growing season is very conspicuous now that the grass is dead. Observations on areas which were very lightly stocked during the past summer have shown that sheep eat pine seedlings regardless of the presence of abundant forage. The past year was an exceptionally good year for feed, but sheep did considerable damage on both weed and bunch grass range.

## PACIFIC NORTHWEST FOREST EXPERIMENT STATION

December has been a quiet month with us and devoted practically entirely to office work. Nearly every member of the organization has been either on annual leave or sick leave some of the time. McArdle was in Washington December 8-20 helping on the final stages of the Douglas fir volume tables, and the rest of the month on leave.

The most interesting event to us was the annual meeting of the Western Forestry and Conservation Association in Victoria. There was had an excellent discussion of the immediate problems of timber land management. It was interesting to see how ready this group is to spend time in considering the technical details of silviculture and protection. Munger gave a paper on "Recent Evidence Affecting Reforestation Theories." After the meeting he stayed over a day to talk projects of mutual concern with Alexander and Barr of the British Columbia Research Department.

Westveld spent the first few days of December on the Owen-Oregon Lumber Company sale on the Crater Forest getting some first-hand impressions and data on swamper burning. This method of brush disposal is giving very good results, and the company officials favor it over piling and burning whenever weather conditions permit. The remainder of the month was spent in the office, most of the time being devoted to compiling the brush disposal data.

Isaac's time was divided between seed dissemination study (with two days in the field), compilation of snag survey notes, and the preparation of the second progress report on the Camp 8 reproduction plots. An interesting feature of the last project was the direct fluctuation of reproduction with the cone crop of the previous year. It was noticeable over an entire 50 chains of totally denuded northeast exposure. However, there was a noticeable diminution of reproduction with increasing distance from green timber. Eight years after burning there is still inadequate reproduction beyond 20 chains from green timber.

Simson has been compiling weather records, analyzing the static graphs and exploring for a possible formula for use in 24-hour forecasting of relative humidity.

Munger has put in all the time not required by routine on the revision of the minimum requirements report for the Douglas fir region along the lines suggested by the reviewers of the first draft.

## NORTHERN ROCKY MOUNTAIN

At this stage of the office season the Northern Rocky Mountain Station usually feels a lack of material for the monthly report. Most of the staff are busy on the compilation of field records and the work has not progressed far enough to reveal the sort of facts that contribute in an interesting way to the monthly report.

The University of Montana has arranged to have Dr. C. A. Schenck come from Germany to give special lectures in forestry during the winter quarter this year. To give the members of the Forest Service in Missoula the greatest opportunity to benefit by Dr. Schenck's presence, Dean Spaulding has kindly arranged a seminar period of an hour a day, six days a week, throughout the winter, during which Dr. Schenck will conduct lectures and discussions on pertinent matters in European forestry and their relation to forestry in this country. Tentatively the seminar is to be devoted to silviculture, management, utilization, and administration. The seminar is to begin the second week in January. All members of the experiment station staff will attend.

Another point of interest is one which has frequently been raised in our fire investigations, namely: When is a material oven dry? Some years ago Shaw used air-dry weights of duff, etc., as a basis in computing moisture contents. Hofmann used weights obtained with an air temperature of 110°F. and a relative humidity of 10%. Gisborne has tried to dry his fuel samples to equilibrium with an air temperature of 200° to 210°F, but could not compute or measure the relative humidity in the small ovens. Obviously there is a condition of absolute dryness which should be the base for determining fuel moisture contents, and this should be at about the boiling point of water with as near as possible to zero relative humidity.

As a result of one of Gisborne's conferences with Prof. Shallenberger of the physics department at the University of Montana, the latter developed a formula by which the relative humidity in drying ovens may be determined. The temperature in the oven, of course, can be measured easily enough. The relative humidity in the room containing the drying oven is then measured with a sling psychrometer, and if there is sufficiently free circulation of air from the room through the oven so that a gas such as water vapor will pass readily through the oven merely changing temperature, then the following formula can be used to determine the relative humidity within the oven.

$$r_o = r \times \frac{\text{Pressure of saturated vapor at room temperature}}{\text{Pressure of saturated vapor at oven temperature}}$$

$r_o$  = relative humidity within the oven

$r_r$  = relative humidity in the room containing the oven

As an example:

$$r_o = 25\% \times \frac{0.732 \text{ (room temp. = } 70^\circ)}{28.75 \text{ (oven temp. = } 210^\circ)}$$

then  $r_o = 25\% \times .02545 =$  six-tenths of one per cent in the oven.

Vapor pressures can be obtained from the tables in Weather Bureau Bulletin 235.

Such a method gives a measure of how nearly absolutely dry the material in the oven may be. The question now is, What combination of temperature and humidity shall we all use as a basis for oven-dry conditions?

Kempff's report from the Priest River Branch emphasizes the mildness of the weather during December. The average temperature for the month was well above normal, making this December the mildest on record. This is attributed chiefly to the almost continuous cloudy weather during this period. For the 31 days from November 26 to December 28, there was a total of only 12 hours of sunshine. Although precipitation records were neither broken nor closely approached, there was some precipitation during 31 days out of 33, making a total of 4.72 inches. Parenthetically, it may be stated that Missoula and its immediate vicinity has also been experiencing rather mild weather. The record now is 370 days without zero temperatures.

#### DISTRICT 5, CALIFORNIA DISTRICT

During the month of December both Show and Dunning spent some time in devising a code to be used in handling the Mc project in the sorting and tabulating machine. Agreement on this was finally reached and Dunning has begun the long task of coding the individual tree sheets on which our data now is.

Dunning also prepared preliminary reports on the third remeasurement, covering two of the small plots on which preliminary data were desired by Forest Management.

Show completed the first draft of the circular on the effect of logging method on silvicultural practice in the pine region. He also assembled the data and began preparation of the report on the occurrence and spread of fires as affected by cover and type. Some very significant relationships are beginning to show up and this investigation will doubtless result in a more complete understanding of the nature of the fire problem.

Because of the possibility that some provision would be made for an experiment station next year, time was devoted to preparing for the District Investigative Committee the proposals for new work and the expansion of old work which the Research men will be prepared to advocate. This will be discussed at the annual meeting, which will be held January 12 and 13.



### LAKE STATES FOREST EXPERIMENT STATION

No startling developments in our work can be recorded for this month. The time was broken up by the Annual Meeting of the Society of American Foresters at Madison, which was attended by two members of the staff, by usual December annual leaves, and by the holidays.

A large number of requests was received from outside sources for data or help on a variety of projects. G. E. Bishop, Secretary-Manager of the Upper Peninsula Development Bureau of Michigan, who is the chairman of the Forest Fire Committee of the newly-organized Michigan Conservation Council, asked for data and material to present to his committee in regard to the Michigan Forest fire situation. A request also came from him for suggestions and help for fitting out a forest fire special train that is to be run through the State in February. Assistance was given to the Minnesota State Forest Service in securing data on which to base standard value tables for use in estimating fire damage. The whole subject of estimating fire damage came under discussion. A student at Clarke University requested detailed data in regard to the occurrence of forest fires in the Lake States, and several similar requests were received.

On the whole, requests for information of one character or another are being received in increasingly large number and replies to them are beginning to consume considerable time of the Station. The Station has no way to refer such inquiries to any other forest organization, since if we did do so they would be returned to us for reply anyhow.

The Station was fortunate in having a large number of distinguished visitors, including S. T. Dana; Prof. Emanuel Fritz of the University of California; Prof. H. H. Chapman; Edward Richards of New York; Dr. J. S. Boyce, Forest Pathologist from District 6; who gave a talk on his recent trip to Europe; Dr. C. D. Navarro de Andrade from Brazil, who is in this country cooperating with the Forest Products Laboratory in making paper tests of pulpwood; H. D. Cochran, Office of Public Relations, D-2; O. A. Zimmerli, Office of Finance and Accounts, Washington; H. D. Petheram, Technical Assistant from the Minnesota National Forest.

### CLOQUET FOREST EXPERIMENT STATION

The staff for a large part of the month was on annual leave. The logging on the Cloquet Forest is making good progress, practically all felling having been completed, but so far there has been no snow for hauling the logs to Cloquet. The office moved to St. Paul to winter quarters the first of the month.

## NORTHEASTERN FOREST EXPERIMENT STATION

The annual meeting of the Northeastern Forest Research Council was held at Springfield on December 10. Dana made a rather detailed report of progress on all of the major projects under way at the experiment station. Members of the council appeared keenly interested in the results being secured and expressed both surprise and gratification that it had been possible for the station to accomplish so much in so short a time and with so small a staff. Continuation of the work along present lines was approved with a follow-up of particularly interesting side lines such as the extent to which reproduction takes place from stored seed, the damage from logging to advance reproduction, and the cleaning of hardwoods in young stands of spruce and fir. Special interest was expressed in the making of soil investigations in connection with the spruce management studies, and the chairman of the council was requested to ask the Secretary of Agriculture that a specialist be made available for that purpose. Great interest was also expressed in the tentative results secured from the fire weather study, and the experiment station was encouraged to attempt to secure additional contributions for the study from State forestry departments and timberland owners' associations.

At the request of C. R. Pettis, superintendent of State forests for the New York Conservation Commission, an opportunity was afforded Mr. H. L. McIntyre and Dr. H. H. York of the Commission to present the present situation in regard to the maintenance of a barrier zone against the western spread of the gipsy moth, and in regard to the control of the white pine blister rust. Mr. A. F. Burgess, who is in charge of moth control work for the Bureau of Entomology in the Northeast, also spoke on the gipsy moth situation and supported Mr. McIntyre's recommendations. The council voted to endorse the full appropriation requested by the entomologists for gipsy moth control, with special reference to maintenance of the barrier zone and to the introduction of parasites, and also to urge upon Congress the appropriation of the full amount of the present appropriation for white pine blister rust control. The council also voted to endorse the increase in the appropriation for the Forest Products Laboratory recommended by the National Forest Program committee. The director of the experiment station was requested to submit to the council detailed estimates of the amount needed to place the work of the station on an adequate basis. Pending receipt of this statement the council voted to urge upon the Secretary of Agriculture a small increase in the station's present allotment to enable it to make full use of its present staff.

The second New England Forestry Congress was held at Springfield from the evening of December 10 to noon, December 12. Practically the entire staff of the experiment station attended at least some of the sessions, and Dana presented a paper on "The Mission of Forest Research." The meeting was well attended and on the whole highly successful. One

of its novel features was an exhibit of a wide variety of forest products manufactured in the region. In connection with this exhibit, the experiment station had a display of the instruments used in forest research, which attracted much favorable attention. The Yale Forest School, the Harvard Forest, New Hampshire University, and the Brown Company also contributed to this exhibit.

Dana attended the annual meeting of the Society of American Foresters at Madison on December 16 and 17, as well as the meeting of the Executive Council on the two preceding days. Immediately after the meeting he made a two-day visit to the Lake States Forest Experiment Station. So much of the work there is along the same lines as that under way in the Northeast that this trip proved an exceptionally interesting and valuable one. While at St. Paul, Dana addressed a meeting of the Minnesota Section of the Society of American Foresters.

During the last week in December, Dana made a flying trip to Maine to report upon the use being made of the State by the Fort Knox Reservation which had been deeded to it by the Federal Government in 1923. The deed of the property to the State contained a restriction that it should be used for "public park purposes only." In the spring of 1925 the State made a sale of all softwood on the Reservation above 7 inches in diameter 4 feet from the ground to a portable sawmill operator. Complaint was made against this sale as being inconsistent with the terms of the deed, and the Secretary of Agriculture was requested by the Secretary of War and the Attorney General to investigate and report upon the facts in the case. Dana found that the complete execution of the original contract would have amounted to practically a clear cutting, leaving only a few hardwoods and suppressed softwoods, and ruining the beauty of the tract. Such a cutting could hardly, by any stretch of the imagination, be regarded as consistent with the use of the tract for park purposes only. Fortunately, the cutting had so far been confined to some overmature timber in a remote corner of the tract which was suffering rather seriously from windfall and windbreak. The removal of this particular stand on an area of between eight and nine acres will be a benefit to the tract, and Dana was able to recommend the cutting of a sufficient additional amount of timber to enable the operator to break even on the proposition. This will avoid the probability of his presenting a claim to the legislature for breach of the original contract, and at the same time will let the State out of a rather difficult situation, since violation of the terms of the original deed carries with it reversion of the title to the Federal Government. Further cuttings on the tract should take the form of improvement cuttings, and should be made only after the adoption by the State of a definite policy for the management of the tract. Dana's recommendations are apparently satisfactory to all concerned, and offer an unexpectedly easy solution to what at first sight appeared like an unusually difficult and delicate problem.

Spaulding finished working over the data on decay of white pine slash and nearly finished a preliminary report upon it. The last part of the month he went to Washington to finish manuscripts on the white pine blister rust which have been laid aside for some time because of pressure of other work. The establishment of the new laboratory on the third floor of Clark Hall is progressing gradually as Spaulding's work develops.

Westveld devoted the entire month to compiling data in connection with his increment study on cut-over spruce lands. Plots established on the White Mountain National Forest to determine the amount of damage to reproduction and young growing stock through logging showed the highest per cent of loss in the 1- to 5-foot classes, which is serious since these classes represent a type of young growth of sufficient height to compete successfully with the incoming hardwoods for a permanent position in the next crop.

Work on the various projects was somewhat interrupted the latter part of the month, due to absence of members of the staff on annual leave.

### SOUTHERN FOREST EXPERIMENT STATION

#### General

Field work on two extensive survey parties, one in southwestern Louisiana and the other in western Florida and southern Alabama claimed practically all of the station staff up until the twentieth of the month when this work in these two regions was brought to a close and the men returned to the office.

The Naval Stores Committee of the Southern Forest Research Advisory Council met at Starke, Florida, on the tenth and eleventh of the month with Forbes and Wyman from this station and Mr. Munns of the Washington office in attendance. The advisability of holding this meeting on the ground where the actual work is being done was very apparent. It offered an excellent opportunity for explaining in detail just how the experiments had been carried on and illustrated just what visible results had been obtained. At the same time, Wyman was able to present the actual figures and correlations which he had already worked up covering the past season's data. Members of the committee who were present at this meeting were State Forester Bunker of Alabama, Professor Burleigh of the University of Georgia Forestry School, Professor J. M. Scott of the University of Florida, and Dr. Austin Cary.

Mr. Munns divided his extended stay in the South between the naval stores work at Starke, the extensive survey party in southern Alabama, and the New Orleans office.



Forbes attended a gathering at Starkville, Mississippi, where he gave a talk on the work of the station before a group of Mississippi agricultural authorities and representatives of the U. S. Bureau of Agricultural Economics. Wyman talked on the results of naval stores experiments at the meeting of the Alabama Turpentine Producers' Association at Bay Minette, Alabama. At the end of the month, Forbes went to Kansas City, Mo., where he represented the Society of American Foresters at the annual meeting of the American Association for the Advancement of Science.

Shivery began work on the compilation of data for a chart or key to the soils of Louisiana, preliminary to similar work for soils of the entire Coastal Plain territory embraced by the station.

Among the several visitors who came to the New Orleans office during the month were two Britishers, Mr. W. G. Campbell and Mr. Stevenson, who are studying in this country on Fellowships of the Commonwealth Foundation. These gentlemen also visited the branch station at Bogalusa.

### Fire

The fire plots at Urania were reexamined by one of the extensive survey crews in company with State Forester Hine. Mortality counts on all plots were made but the regular fall burning on these experimental areas had to be foregone this year due to the unfavorableness of conditions for obtaining a satisfactory burn.

### Management

Two extensive survey parties were in the field during the first three weeks of December. Demmon, Shivery, and Hicks covered part of the longleaf pine district of southwestern Louisiana while Hadley and Henry with help during part of this period from Forbes, Wyman, and Munns, worked in the longleaf pine belt near the Alabama - Florida boundary line. Each of the parties received active cooperation from the respective State forest departments of Louisiana and Alabama, as members of their staffs had been assigned to help in this field work.

On the Florida National Forest, Hadley was able to obtain data which brought out better than in any instance heretofore obtained in the extensive survey work definite correlations between seed trees and reproduction under varying conditions of number of seed trees, fire history, brush density, and site. A brief preliminary examination of the data indicates that more definite correlations are obtainable on poorer sites than on the good. Further, it appears that in this particular region the maximum amount of reproduction is established where an average of six seed trees per acre are left after cutting - less than this number seems to be insufficient for obtaining a complete restocking; more than six trees seem to make for a competition too intensive for the establishment of a full cover of reproduction.

After discussing at length with Forbes and Mumms the methods to be used in the working up of accelerated growth data, Demmon, with Hicks' assistance, finally completed the study of the Kaul tract in Alabama. This particular study has led to some very interesting discussions on office computation methods and a basis for similar studies has now been established.

Shivery spent considerable time in the office in rechecking the summary sheets on volumes for the Mc-1 (Bogalusa) plots as well as each of the quadrat maps for the same project.

### Naval Stores

The conference of the Naval Stores Committee of the Southern Forest Research Advisory Council at Starke has already been mentioned. For three days just previous to this meeting, Wyman, Forbes, and Mumms had an opportunity of discussing plans for the naval stores experimental work for the 1926 season. A determination was worked out at this time of the size of groups necessary for obtaining reliable results and it was decided for the next season's work to increase the number of trees per group to two hundred and to duplicate most of the groups.

The data already obtained from the naval stores experiments at Starke are now being put onto punch cards for correlation purposes and this coding work is being done by Wyman and Henry in the Starke office.

During the current month, Wyman wrote up the naval stores section of the station program for 1926 and also revised an article on "Leasing" to be submitted to farm papers.

### Forestation

Wakeley and Barron at Bogalusa spent practically their entire time during the month on forestation projects, which consisted of the preparation and sowing of seed beds for the regular fall sowing. Other routine work at this time involves extracting, cleaning, counting, and weighing of seed samples for the nursery; making germination counts; and measuring, weighing, and photographing seedlings grown under various methods of nursery practice.

## APPALACHIAN FOREST EXPERIMENT STATION

### General

A first draft of the station's annual investigative report and program was prepared by Frothingham, who also devoted considerable time to correspondence and plans relating to the meeting of the Forest Research Council at Richmond on January 5, and attended the annual meeting of the Society of American Foresters at Madison, Wisconsin, December 14-17.

### Demonstration Forest

Plans are being considered for the establishment of an experimental and demonstration forest of a thousand acres or so in the Bent Creek Working Circle of the Pisgah National Forest. The proposed area, which is about ten miles from Asheville, includes the station's investigative area, in which the field laboratory and several sets of permanent sample plots are located. It is hoped that, in cooperation with the Pisgah force, this area may be surveyed and a working plan prepared for it during 1926.

### Study of Weather in Relation to Forest Fires

The months of October and November, which were quite unfavorable for forest fires, were followed by a dry period of several days early in December. McCarthy had closed field work in the fire weather study, but he and Supervisor Mattoon kept in touch with weather conditions during this period by visits to the local Weather Bureau office. Late in November a noteworthy extra-tropical storm came to us out of the Gulf region. This storm, coming at a time when no more of the kind were expected this year, was the forerunner of the dry period in early December. Such observations as this, extended over a period of years, may point out the characteristic storm movement which prevails in dry periods.

The hygrograph records for October and November show that low night temperatures, bringing the relative humidity nearly to the saturation point practically every night, are an important factor in reducing the forest fire hazard in this region.

### Pathological Studies

Dr. Humphrey returned to the station in early December after a brief trip to Madison, Wisconsin, to complete certain experiments in progress at the Forest Products Laboratory and to assemble data for the preparation of several manuscripts during the winter. During the latter part of the month he resumed work at Morganton, N. C., on the tannin extract study which has largely engaged his attention during the summer.

The preparation of all samples of chestnut wood for analysis will be conducted in the well equipped laboratory of Dr. S. J. Rogers, Chemist for the International Shoe Company at Morganton, who has shown a keen personal and professional interest in the study. About fifty samples in varying stages of decay are now on hand at that place for analysis.

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